

THURSDAY, MARCH 30, 1911.

ENTOMOLOGICAL STUDIES AND PROBLEMS.

The Hope Reports. Vol. vii., 1908-10. Edited by Prof. Edward B. Poulton, F.R.S. (Oxford: Printed for private circulation by Horace Hart, 1910.)

THIS seventh volume of "Hope Reports" contains publications that have appeared between June, 1908, and June, 1910. It contains a mass of interesting material testifying to active interest taken in entomological studies and problems. The volume opens with an account of Dr. F. A. Dixey's patient and exhaustive investigation into the scent-distributing plume scales of the Pierine butterflies. These plume scales, when present, are found only in the male, and are confined to the upper surface of the wings, sometimes scattered over the general surface of both fore and hind wings, sometimes confined to special areas. An odoriferous secreted substance volatilises, and passing through the scales diffuses, giving an odour characteristic of the species of butterfly. Dr. Dixey passes in review many Pierine butterflies, and describes the structural characters and the various forms and distribution of the scent-scales, and suggests as a result of his research that the scent-scales have a diagnostic value for specific and certainly for generic distinctions. Further, the occurrence and the character of the scales can afford subsidiary evidence to other and more relied-on evidences of affinity.

The never-failing interest in the highly involved phenomenon of protective mimicry is a subject in which British workers—Oxford holding a deservedly foremost place—have won a world reputation, and this explains, and receives justification in, a series of memoirs in this volume of "Hope Reports." Prof. Poulton describes material from Durban, experimentally obtained by Mr. G. F. Leigh from the three mimetic female forms of *Papilio dardanus*, Brown, subspecies *cenea*, Stoll. In dealing with hereditary relationships of the several female forms, evidence is afforded that the proportion of mimetic forms in a locality is due partly to the proportion of, and partly to the relative conspicuousness of, their particular models, and the way is suggested in which the details of mimetic patterns have become adjusted to those of the models. A second paper, by Prof. Poulton, on the mimetic North American species of the genus *Limenitis* and their models, is followed by "Some Bionomic Notes on British East African Butterflies," by the Rev. K. St. Aubyn Rogers, who, in a long paper, illustrated by four plates, gives many original observations bearing on mimicry and its problems. J. C. Moulton follows with an illustrated account (five plates) of some of the principal mimetic (Müllerian) combinations of tropical American butterflies, and Dr. G. B. Longstaff, in a memoir full of observation, gives many bionomic notes on butterflies from different parts of the world.

In all the above memoirs there is much new
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information, and additional experimental and observational evidence in favour of Batesian and Müllerian mimicry.

The protective mimicry theory can only justify itself if there be proof that the mimics receive protection from insectivorous enemies, and in this connection attention may be directed to memoir No. 8 of these "Hope Reports," where Mr. Guy A. K. Marshall, in "Birds as a Factor in the Production of Mimetic Resemblance among Butterflies," deals with the debated question of appetite for butterflies among birds. Mr. Marshall gives here a very satisfying and most helpful review, in fifty-three pages, of such appetite and attack, summarising the evidence from world's records.

In memoir 9, "An Account of Some Experiments on the Edibility of Certain Lepidopterous Larvæ," Mr. Eltringham, in experiments where various larvæ were offered to lizards, obtained interesting results with caterpillars of *Boarmia rhomboidaria*. These caterpillars are well known to have a very marked resemblance to ivy twigs, and when motionless may easily be mistaken for twigs. One would have expected that this caterpillar, on being discovered, would prove palatable, whereas these *Boarmia rhomboidaria* caterpillars, fed on ivy, proved most distasteful to lizards. The same caterpillars, however, fed on apple for some days, were taken most willingly by the same lizards.

The systematic side of entomology is represented in the "Reports" by a series of memoirs on the Orthoptera. Three of these are on the Blattidæ by an expert in this family, viz. Mr. R. Shelford, who also writes on "Two Remarkable forms of Mantid Oothecæ." Dr. Hancock, of Chicago, describes Tetriginæ in the Oxford University Museum, and Dr. Achille Griffini, of Genoa, has three papers on the material at Oxford of Gryllacris, a genus of Locustidæ.

Mr. A. H. Hamm describes the courtship of some Empid species, supplementing previous observations by Howlett. The Empidæ, or dance-flies, are predaceous flies, found under trees or among shrubs and by streams. The females of some species were observed to circle round in slow flight, and then to be joined by a male. This male, provided with prey (some previously caught fly), singled out a female, and on the two flies settling for copulation, the prey is found to have been transferred to the female. When the insects, male and female, were netted on the wing before settling, the prey was also found in the net. The female sucks the prey during copulation. Mr. Colman J. Wainwright describes *Setulia grisea*, a Tachinid new to Britain, and then follow notes on the Lepidoptera of the Dale collection in the University of Oxford Museum, by Mr. J. J. Walker; notes on the British dragonflies of the Dale collection, by Mr. W. J. Lucas; and a supplementary list of Coleoptera of the Oxford district, by Mr. J. J. Walker. There is further a series of extracts from the *Proceedings* of the Entomological Society of London, which include numerous interesting bionomic observations.

These memoirs and the reports of the Hope Pro-
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fessor of Zoology represent a body of useful and interesting scientific work on which Oxford University can be heartily congratulated. The excellent work done is honourable also to the science of entomology. The laws of life generally apply equally to the lower forms as to the higher, the general problems of heredity, variation, environment, &c., all receive illustration in the insect world, and such studies and observations as are recorded in these "Hope Reports" make a wide appeal to all zoologists and students of biological problems.

CYZICUS.

Cyzicus: Being some Account of the History and Antiquities of that City and of the District Adjacent. By F. W. Hasluck. (Cambridge Archaeological and Ethnological Series.) Pp. xii+326; sketch maps. (Cambridge: University Press, 1910.) Price 10s. net.

MR. F. W. HASLUCK, the assistant-director of the British School at Athens, is an archaeologist whose knowledge of the bypaths of travel in the Levant is extensive and peculiar. His work, too, has lain among the bypaths of antiquity rather than on its main routes. One of the pleasures of the "Annual of the British School at Athens" for some years past has been the reading of the assistant-director's articles on Frankish Greece and the Ægean Isles in mediæval days. Mr. Hasluck has devoted most of his time to the lands still under Turkish sway, and the present book is a description of what is known of a certain district of Bithynia, of which the centre was the ancient and famous city of Cyzicus.

The author modestly says that his book "lays little claim to be considered as more than a compilation, checked, where possible, by original research." It is more than this, and the original research has been so fruitful and is so genially described that we may wish, perhaps, that Mr. Hasluck had given us only his original research and had left the compilation part out. The book would not have been much smaller, and it would have been more interesting. However, this was not the plan and intention of the book, and no doubt the material derived by Mr. Hasluck from Wiegand and other recent authorities on this part of Asia Minor will be useful to English readers. Wiegand's drawings of the Roman bridge at Sultan Chair, reproduced by Mr. Hasluck, should be of interest to architects. It is a fine and dignified design, worthy of modern adaptation.

The book, part original and part compilation, then, is a very exhaustive monograph on Cyzicus and its district, followed by a very complete bibliography. Mr. Hasluck treats first of topography, in which the results of his own journeys are included, and various new identifications of ancient sites are made. Then he passes to the history, religion, and ancient government of Cyzicus, followed by a very useful index of inscriptions. Mr. Hasluck's photographs are good, and it is a pity there are not more of them. The plans are mostly from Wiegand.

Mr. Hasluck traces the history of Cyzicus from its
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foundation to the present day, when its site is a waste of meagre and uninteresting ruins, and only the name Bal-kiz preserves the ancient Παλαῖδ Κίζικος. In Turkish, *Bal-kiz* means "Honey-Maid," so naturally the Moslem mind identified this *Bal-kiz* with Balkis, the Queen of Sheba, who visited Suleiman the Wise; and the ruined Roman amphitheatre, turned into a castle in Frankish days, was for the Turks Balkis Serai, "the Palace of Balkis." This is one of the many curious little bypaths into which Mr. Hasluck leads us.

The only criticism one has to make is that Mr. Hasluck is too much inclined to rely upon classical authority for his early dates. He accepts the traditional date (756 B.C.) for the foundation of Cyzicus, although there are serious grounds for thinking that this, like all the generally accepted dates of the founding of the oldest Greek colonies, is too early. The traditional year of the second colonisation, 675 B.C., is a more probable date for the first. After all, these dates rest on no more trustworthy grounds than do the Greek dates for the kings of Lydia, which are known to be all wrong. It is odd to find Mr. Hasluck quoting the Eusebian date for Ardys, which is nearly a century and a half too high. Surely, nowadays, we should quote the certain date, known from the contemporary Assyrian records, which place the reign of his father Gyges between 675 and 650. If the "second" founding (which one may think was probably the first and only founding) took place in 675, it can hardly have been due, as Mr. Hasluck considers, to the friendliness of Gyges to Greek colonisation, as in 675 he had hardly been any time upon the throne. However this may be, it is in any case certain that Ardys became king about 650, and Eusebius is really too doubtful an authority even to be mentioned.

In the chapter on religion we find an instance of the same indifference to the results of Oriental research in an adhesion to the old fable of the Sinopean origin of the god Serapis, who is accepted by Mr. Hasluck as originally a native deity of northern Asia Minor (p. 227). Letronne long ago explained the genesis of this story, first circulated by Plutarch and then copied by Tacitus. Sarapis was a purely Egyptian deity, Asar-Hapi, Osiris-Apis, represented at Alexandria in a Greek Zeus-form. The seat of his cult at Memphis seems to have been called *Si-n-Hapi*, "Place-of-Apis," *Sinopion* in Greek. Hence the Sinope story.

However, Mr. Hasluck may be excused for not knowing this fact, notwithstanding that attention was directed to it in an article (by the late Mr. P. D. Scott-Moncrieff) on Plutarch's "De Iside et Osiride," which lately appeared in the "Journal of Hellenic Studies." Classical archaeologists should, no doubt, be a little more open than they often are to the reception of Egyptological and other Oriental knowledge; but they cannot be expected to be always aware that some time-honoured Greek belief or other about Oriental matters has long been exploded.

The point is a very minor one in this book, and has